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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,194	08/21/2003	Mark Daniel D'Agostini	06418 USA	7084
23543	7590	02/15/2005	EXAMINER	
AIR PRODUCTS AND CHEMICALS, INC. PATENT DEPARTMENT 7201 HAMILTON BOULEVARD ALLENTOWN, PA 181951501			RINEHART, KENNETH	
			ART UNIT	PAPER NUMBER
			3749	

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/645,194	<b>Applicant(s)</b> D'AGOSTINI ET AL.	
	<b>Examiner</b> Kenneth B Rinehart	<b>Art Unit</b> 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10,14-16,26 and 30-32 is/are allowed.
- 6) ☒ Claim(s) 1-5,11-13,17-21 and 27-29 is/are rejected.
- 7) ☒ Claim(s) 6-9 and 22-25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)<br>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)<br>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____.<br>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)<br>6) <input type="checkbox"/> Other: _____. |
|---|--|

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 12/27/04 have been fully considered but they are not persuasive. The applicant argues Przewalski does not disclose all of the missing features noted by the Examiner. The examiner respectfully disagrees. The claim language not disclosed by Ikeda are presented in the office action and taught by Przewalski. The arguments of the applicant found at the bottom of page 16 and the top of page 17 are not pertinent. The applicant argues that "even if the afterburner was considered to be a second burner combusting a secondary fuel with a secondary oxidant, it does not form a secondary flame generating a supplemental radiant heat in the barrel of the cyclone combustor". Przewalski was not used to teach this limitation. It is noted that the features upon which applicant relies (i.e., a secondary flame generating a supplemental radiant heat in the barrel of the cyclone combustor) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. The applicant next argues that the "Since the prior art does not suggest the desirability of combining the cited references, the Examiner has not made a prima-facie case of obviousness." The examiner disagrees. Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found in the knowledge generally available to one of ordinary skill in the art. In this case, in the knowledge generally available to one of ordinary skill in the art ignition burners are used to start a combustion apparatus. Otherwise, the combustion apparatus would be fairly useless. In response to applicant's argument that it is improper to combine the cited references (Ikeda, et al. and Przewalski)

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because those references do not address or solve the problems addressed by Applicants' claimed invention, nor do the references appreciate the advantages of Applicants' claimed invention.) the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 11-13, 17-21, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al in view of Przewalski. Ikeda discloses a method for operating a cyclone combustor having a first burner (21, fig. 7) and a second burner (12A, 12 B, 11D, 11C, fig. 7), each of the first burner and the second burner being in communication with a barrel having a longitudinal axis (fig. 7), a burner end (above item number 6, fig. 4) adjacent at least one of the first burner and the second burner (top end of 20, fig. 7), and a throat end opposite the burner end (22, fig. 7), comprising the steps of: feeding a stream of a primary fuel and a primary oxidant having a first oxygen concentration into the first burner (11A, 12A, fig. 7), combusting at least a portion of the primary fuel with at least a portion of the primary oxidant in the barrel of the cyclone combustor, thereby forming a plurality of primary products of combustion in the barrel of the cyclone combustor, thereby generating a first amount of heat in the barrel of the cyclone combustor (fig. 7), the secondary flame has a longitudinal axis substantially parallel to

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the longitudinal axis of the barrel of the cyclone combustor (fig. 7), the primary fuel is coal (col. 1, line 8), the second burner has a longitudinal axis substantially parallel to the longitudinal axis of the barrel of the cyclone combustor (fig. 7), at least a portion of the second burner is adjacent the first burner (fig. 7), feeding a stream of a primary fuel and a primary oxidant having a first oxygen concentration into the first burner (fig. 7), draining at least a portion of the stable and continuous flow of the molten slag from the barrel of the slagging cyclone combustor (53, fig. 7), the secondary flame generating a supplemental radiant heat in the barrel of the cyclone combustor (flame from burner will inherently radiate (fig. 7) means for feeding a stream of a primary fuel and a primary oxidant having a first oxygen concentration into the first burner (11A, 12A, fig. 7), means for combusting at least a portion of the primary fuel with at least a portion of the primary oxidant in the barrel of the cyclone combustor, thereby forming a plurality of primary products of combustion in the barrel of the cyclone combustor (fig. 7), means for draining at least a portion of the stable and continuous flow of the molten slag from the barrel of the slagging cyclone combustor (53, fig. 7). Ikeda et al discloses applicant's invention substantially as claimed with the exception of feeding a stream of a secondary fuel and a secondary oxidant having a second oxygen concentration greater than or equal to the first oxygen concentration into the second burner, and combusting at least a portion of the secondary fuel with at least a portion of the secondary oxidant, the secondary fuel is a non-solid fuel, feeding a stream of a secondary fuel and a secondary oxidant having a second oxygen concentration greater than or equal to the first oxygen concentration into the second burner, and combusting at least a portion of the secondary fuel with at least a portion of the secondary oxidant, thereby forming a plurality of secondary products of combustion and a secondary flame, means for

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feeding a stream of a secondary fuel and a secondary oxidant having a second oxygen concentration greater than or equal to the first oxygen concentration into the second burner, and means for combusting at least a portion of the secondary fuel with at least a portion of the secondary oxidant, thereby forming a plurality of secondary products of combustion and a secondary flame. Przewalski teaches feeding a stream of a secondary fuel and a secondary oxidant having a second oxygen concentration greater than or equal to the first oxygen concentration into the second burner, and combusting at least a portion of the secondary fuel with at least a portion of the secondary oxidant (col. 2, lines 65-69), the secondary fuel is a non-solid fuel (col. 2, line 68), feeding a stream of a secondary fuel and a secondary oxidant having a second oxygen concentration greater than or equal to the first oxygen concentration into the second burner (col. 2, lines 65-69), and combusting at least a portion of the secondary fuel with at least a portion of the secondary oxidant, thereby forming a plurality of secondary products of combustion and a secondary flame, (col. 5, lines 54-67), means for feeding a stream of a secondary fuel and a secondary oxidant having a second oxygen concentration greater than or equal to the first oxygen concentration into the second burner (col. 2, lines 65-69), and means for combusting at least a portion of the secondary fuel with at least a portion of the secondary oxidant, thereby forming a plurality of secondary products of combustion and a secondary flame (col. 2, lines 65-69) for the purpose of providing oxygen and fuel to the ignition burner so that it will operate. It would have been obvious to one of ordinary skill in the art to modify Ikeda by including feeding a stream of a secondary fuel and a secondary oxidant having a second oxygen concentration greater than or equal to the first oxygen concentration into the second burner, and combusting at least a portion of the secondary fuel with at least a portion of the secondary

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oxidant, the secondary fuel is a non-solid fuel, feeding a stream of a secondary fuel and a secondary oxidant having a second oxygen concentration greater than or equal to the first oxygen concentration into the second burner, and combusting at least a portion of the secondary fuel with at least a portion of the secondary oxidant, thereby forming a plurality of secondary products of combustion and a secondary flame, means for feeding a stream of a secondary fuel and a secondary oxidant having a second oxygen concentration greater than or equal to the first oxygen concentration into the second burner, and means for combusting at least a portion of the secondary fuel with at least a portion of the secondary oxidant, thereby forming a plurality of secondary products of combustion and a secondary flame as taught by Przewalski for the purpose of providing oxygen and fuel to the ignition burner so that it will operate which will allow a return to be realized on the capital investment of the device.

***Allowable Subject Matter***

Claims 10, 14-16, 26, 30-32 are allowed.

Claims 6-9, and 22-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B Rinehart whose telephone number is 571-272-4881. The examiner can normally be reached on 7:20 -4:20.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached on 571-272-4881. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kbr

  
KENNETH RINEHART  
PRIMARY EXAMINER